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ABSTRACT

Evidence on the predictive validity of the Vane Kindergarten Test (VKT) as a part of the comprehensive screening and assessment battery administered by the Horseheads Central School District in New York is presented. Variable numbers of students at each of six elementary schools were administered the VKT. At the end of the kindergarten year, all students were administered the Stanford Early School Achievement Test, Level I as a part of the district's regular testing program. Individual regression equations and Pearson product-moment correlations were calculated for each member school and for the district. The full scale Vane IQ was correlated with total test raw score on the Stanford. The correlations are presented by school building. The three schools with the highest standard deviations in achievement scores were those experiencing the highest predictive validity. Credulence is therefore added to the proposition that the low validities could be attributable to truncated or range anomalies and not to the test itself. At the present time, the relationship at the end of kindergarten is sufficiently great to warrant a combination of the Vane IQ with other variables, and does not suggest abandoning the test at Horseheads. (RC)

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Report # 125

Predictive Validity of the Vane for the Stanford Early School Achievement Test

November, 1976

In recent years, there has been a striking re-emphasis on the early identification of children with learning disabilities (Haring and Ridgway,1967). However, it is apparent that there is difficulty uncovering an easily administered battery which effectively predicts student growth.

The Vane Kindergarten Test has been suggested as a viable test for pre-K screening which may be administered by a qualified psychologist in approximately 15 minutes. The Vane K Test at Horseheads is a significant part of an overall pre-K screening process administered by trained individuals. Although Vane notes that the Vane should be administered by a psychologist only, the research literature is repleat with exceptions to this general rule, with apparent little concern. Likewise at Horseheads, trained individuals, not psychologists, administer the test battery. The items do not appear to need the critical eye of a qualified psychologist, although some future comparison of protocols might be a future undertaking.

The Vane K Test meets the basic administration requirements of time and ease of administration and is, in fact, compatible with a partial group administration. However, a number of investigators have seriously questioned the validity and reliability of the VKT. Therefore, the present study was conducted to assess the predictive validity of the VKT at the Horseheads Central School District.

Smith (1970) suggests that "a test which is used to differentiate between individuals" should have a reliability of r = .90 or better. Vane (1968) has reported a reliability coefficient of r = .97 for 14 kindergarten children for a one week intertest interval. Clearly, the sample is far too small to permit an accurate national representation. For another sample of 36 kindergarten children tested in April and retested in October after they entered grade 1, r = .88. This second sampling of 36 is, once again, apparently too small, but begins to approach what could be a sufficient N size. In the second sample, the reliability coefficient can be considered to be marginal, a result which could be perplexed by the relatively long test-retest interval.

Borg and Gall (1974) note that a minimal validity coefficient for a test to be interpretable on an individual level must be between, and at the higher end of the r = .65 to .85 range. Powers (1974) has criticized the VKT noting "as presently constructed, the VKT is not an acceptable instrument for use in pre-school screening" (pg. 1007). Powers attempted to predict academic achievement for 148 pre-K children and 141 kindergarten children. After one year, the Metropolitan Readiness Tests were administered to the former pre-K students. A second group of students received the Primary I Battery of the Stanford Achievement Test 10 months after an

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end of grade K Vane administration. The highest correlation, r = .47, was between the vocabulary I.Q. and the vocabulary subtest of the Stanford Achievement Test Primary I Battery. The full scale VKT I.Q. correlation with the Metropolitan Readiness Test was r = .53. Although this is a significant correlation ($p<.01$), the r is not sufficiently great to justify the use in the assessment of individuals.

In an unpublished paper, Vane cites a number of studies which attest to the validity of the Vane Kindergarten Test. However, many of these correlations are of marginal magnitude. Vane notes the correlation between the VKT and the Stanford Binet at r = .76, VKT and Stanford Binet (a different study) at r = .76, VKT and WPPSI at r = .75 (at a Head Start Center), VKT and Stanford Achievement Test (two years later) at r = .60, and the VKT and the California Achievement Test at r = .59.

A number of important issues concerning test evaluation have not been addressed. The first is that careful consideration has not been given to problems which traditionally plague computation and subsequent interpretation of r coefficients. For example, a correlation between I.Q. and achievement for only those who qualify for a Head Start Program would not be expected to be as high as an r for a sample which approximated the sample on which the test was standardized, assuming that approached normality. Secondly, although not specifically noted in any of the research studies, there is the profound possibility that the students in need of remedial attention were detected by teachers and given such. If such were the case, then a lower r would be predicted because of the possibility of a deviation from linearity for the low I.Q. students. However, it is impossible to anticipate the extent of the decrease in r due to range anomalies or problems associated with the effects of teacher intervention on measurement.

The present research presents evidence on the predictive validity of the VKT as a part of the comprehensive screening and assessment battery administered by the Horseheads Central School District.

Subjects

Variable numbers of students at each of six elementary schools were administered the VKT as a part of the District Pre-K Screening Program. At the end of the kindergarten year, all students were administered the Stanford Early School Achievement Test, Level I as a part of the district's regular testing program.

Design

Individual regression equations and Pearson Product-Moment Correlations have been calculated for each member school and for the district. Note should be taken of the fact that students doing poorly on the Vane were given special attention throughout the kindergarten year through a number of programs. However, due to the relatively small proportion of students involved, the effect on r is expected to be minimal.

Results and Discussion

The full scale Vane I.Q. was correlated with Total Test Raw Score on the Stanford Early School Achievement Test. The correlations are presented by building in Table 1.

Table 1.

	N	Vane Mean	Vane SD	SESAT Mean	SESAT SD	r	Regression Equation *
Big Flats	67	117.78	14.58	106.78	10.14	.44	.316X + 70.71
Broad St.	70	113.89	13.84	110.13	8.88	.44	.28X + 78.22
Center St.	53	110.66	14.50	92.79	17.84	.58	.714X + 13.74
Gardner Rd.	41	107.37	13.52	106.63	12.95	.52	.502X + 52.78
Ridge Rd.	66	118.45	15.44	103.57	14.63	.64	.608X + 31.57
Sing Sing Rd.	67	114.91	15.07	109.60	11.35	.49	.369X + 67.16
District	364	114.41	14.90	105.34	13.84	.49	.453X + 53.50

The results indicate that the VKT has higher predictive validity at Center Street, Gardner Road and Ridge Road Elementary Schools. Big Flats, Broad Street and Sing Sing Road Elementary Schools had low correlations. It is interesting to note that three schools with the highest standard deviations in achievement scores are those experiencing the highest predictive validity. Credulence is therefore added to the proposition that the low r's could be attributable to truncated or range anomalies and not to the test itself. Additionally, there remains the possibility that adding new information and the application of a multivariate model to the information collected in the Pre-K Screening Program could further increase the value of r. At the present time, the relationship at the end of grade K is sufficiently great to warrant a combination of the Vane I.Q. with other variables, and does not suggest abandoning the test at Horseheads.

* The Regression Equation has the general form,
$y' = mX + b$, X = full scale Vane I.Q.

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